

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/036484 A1

(51) International Patent Classification⁷: G06K 9/00, G02F 1/133, 1/13, 1/1368

(21) International Application Number: PCT/KR2003/001768

(22) International Filing Date: 30 August 2003 (30.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 10-2002-0063370 17 October 2002 (17.10.2002) KR

(71) Applicant (for all designated States except US): SAM-SUNG ELECTRONICS CO., LTD. [KR/KR]; 416, Mae-tan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do 442-742 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SONG, Jean-Ho [KR/KR]; 305-1403 I-Park, Seowonmaeul 3danji, Sanghyeon-ri, Suji-eup, Yongin-si, Gyeonggi-do 449-843 (KR). YANG, Sung-Hoon [KR/KR]; 106-301 Ssangyong Apt., #706 Seongsu 1-ga 1-Dong, Seongdong-Gu, Seoul

133-111 (KR). CHAI, Chong-Chul [KR/KR]; 102-1004 Samsung Apt., Singongduck-dong, Mapo-gu, Seoul 121-765 (KR). CHOI, Joon-Hoo [KR/KR]; 108-303 Samho Apt., Youngcheon-dong, Seodaemun-gu, Seoul 120-768 (KR).

(74) Agent: PARK, Young-Woo; 5F, Seil Building, #727-13, Yoksam-dong, Gangnam-gu, Seoul 135-921 (KR).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

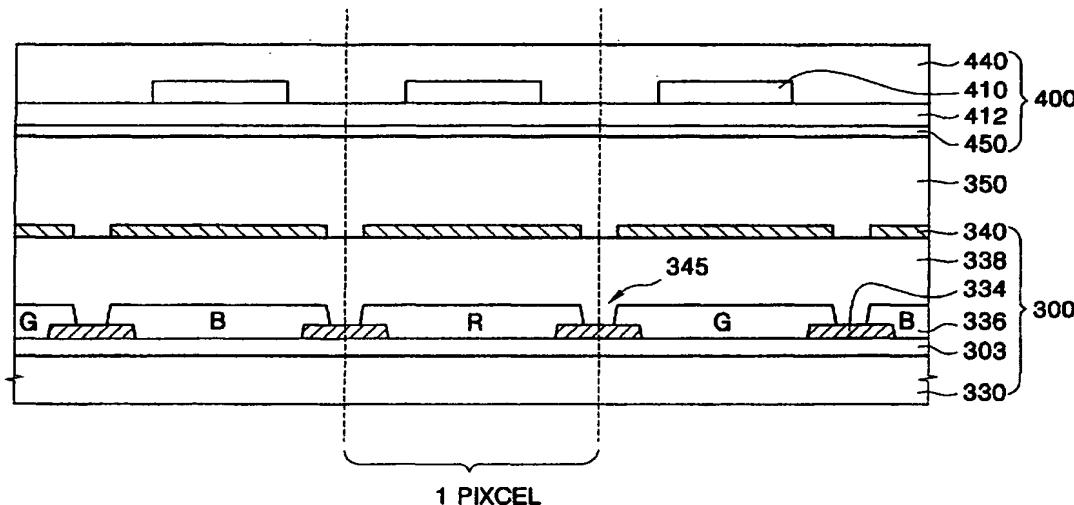
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

{Continued on next page}

(54) Title: LIQUID CRYSTAL DISPLAY DEVICE BUILT-IN FINGER PRINTING DEVICE AND METHOD OF MANUFACTURING THE SAME



WO 2004/036484 A1

(57) Abstract: A liquid crystal display device having fingerprint identification device for enhancing aperture ratio and transmissivity of a TFT-LCD panel is disclosed. A fingerprint identification substrate (400) is attached to a TFT substrate (300). The TFT substrate has color-filter-on-array structure in which the color filters (336) and the thin film transistors can be eliminated, the aperture ratio is increased, and the quality of image display is enhanced. In addition, the transmissivity is increased according to the decrease of the number of glass substrate used in the liquid crystal display device, so that the sensitivity of fingerprint identification is enhanced.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.